

$\Xi(1950)$ $I(J^P) = \frac{1}{2}(?)$ Status: ***

We list here everything reported between 1875 and 2000 MeV. The accumulated evidence for a Ξ near 1950 MeV seems strong enough to include a $\Xi(1950)$ in the main Baryon Table, but not much can be said about its properties. In fact, there may be more than one Ξ near this mass.

 $\Xi(1950)$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
1950±15 OUR ESTIMATE				
1955± 6		ADAMOVICH	99B	Σ^- nucleus, 345 GeV
1944± 9	129	BIAGI	87	SPEC Ξ^- Be $\rightarrow (\Xi^-\pi^+)\pi^-X$
1963± 5±2	63	BIAGI	87C	SPEC Ξ^- Be $\rightarrow (\Lambda\bar{K}^0)X$
1937± 7	150	BIAGI	81	SPEC SPS hyperon beam
1961±18	139	BRIEFEL	77	HBC 2.87 $K^- p \rightarrow \Xi^-\pi^+X$
1936±22	44	BRIEFEL	77	HBC 2.87 $K^- p \rightarrow \Xi^0\pi^-X$
1964±10	56	BRIEFEL	77	HBC $\Xi(1530)\pi$
1900±12		DIBIANCA	75	DBC $\Xi\pi$
1952±11	25	ROSS	73C	$(\Xi\pi)^-$
1956± 6	29	BADIER	72	HBC $\Xi\pi, \Xi\pi\pi, YK$
1955±14	21	GOLDWASSER	70	HBC $\Xi\pi$
1894±18	66	DAUBER	69	HBC $\Xi\pi$
1930±20	27	ALITTI	68	HBC $\Xi^-\pi^+$
1933±16	35	BADIER	65	HBC $\Xi^-\pi^+$

 $\Xi(1950)$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
60±20 OUR ESTIMATE				
68±22		ADAMOVICH	99B	Σ^- nucleus, 345 GeV
100±31	129	BIAGI	87	SPEC Ξ^- Be $\rightarrow (\Xi^-\pi^+)\pi^-X$
25±15±1.2	63	BIAGI	87C	SPEC Ξ^- Be $\rightarrow (\Lambda\bar{K}^0)X$
60± 8	150	BIAGI	81	SPEC SPS hyperon beam
159±57	139	BRIEFEL	77	HBC 2.87 $K^- p \rightarrow \Xi^-\pi^+X$
87±26	44	BRIEFEL	77	HBC 2.87 $K^- p \rightarrow \Xi^0\pi^-X$
60±39	56	BRIEFEL	77	HBC $\Xi(1530)\pi$
63±78		DIBIANCA	75	DBC $\Xi\pi$
38±10		ROSS	73C	$(\Xi\pi)^-$
35±11	29	BADIER	72	HBC $\Xi\pi, \Xi\pi\pi, YK$
56±26	21	GOLDWASSER	70	HBC $\Xi\pi$
98±23	66	DAUBER	69	HBC $\Xi\pi$
80±40	27	ALITTI	68	HBC $\Xi^-\pi^+$
140±35	35	BADIER	65	HBC $\Xi^-\pi^+$

 $\Xi(1950)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
$\Gamma_1 \Lambda\bar{K}$	seen
$\Gamma_2 \Sigma\bar{K}$	possibly seen
$\Gamma_3 \Xi\pi$	seen
$\Gamma_4 \Xi(1530)\pi$	
$\Gamma_5 \Xi\pi\pi$ (not $\Xi(1530)\pi$)	

NODE=B052

NODE=B052

NODE=B052M

NODE=B052M

→ UNCHECKED ←

OCCUR=2

OCCUR=3

NODE=B052W

NODE=B052W

→ UNCHECKED ←

OCCUR=2

OCCUR=3

NODE=B052215;NODE=B052

DESIG=7;OUR EST

DESIG=6

DESIG=1;OUR EST

DESIG=2

DESIG=3

NODE=B052220

NODE=B052R5

NODE=B052R5

 $\Xi(1950)$ BRANCHING RATIOS

$\Gamma(\Sigma\bar{K})/\Gamma(\Lambda\bar{K})$	Γ_2/Γ_1
VALUE CL% EVTS	DOCUMENT ID TECN COMMENT
<2.3 90 0	BIAGI 87C SPEC Ξ^- Be 116 GeV

$\Gamma(\Sigma\bar{K})/\Gamma_{\text{total}}$					Γ_2/Γ	NODE=B052R4 NODE=B052R4
<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>		
possibly seen	17	HASSALL	81	HBC	$K^- p$ 6.5 GeV/c	
$\Gamma(\Xi\pi)/\Gamma(\Xi(1530)\pi)$					Γ_3/Γ_4	NODE=B052R1 NODE=B052R1
<u>VALUE</u>		<u>DOCUMENT ID</u>	<u>TECN</u>			
$2.8^{+0.7}_{-0.6}$		APSELL	70	HBC		
$\Gamma(\Xi\pi\pi(\text{not } \Xi(1530)\pi))/\Gamma(\Xi(1530)\pi)$					Γ_5/Γ_4	NODE=B052R2 NODE=B052R2
<u>VALUE</u>		<u>DOCUMENT ID</u>	<u>TECN</u>			
0.0 ± 0.3		APSELL	70	HBC		

$\Xi(1950)$ REFERENCES

ADAMOVICH	99B	EPJ C11 271	M.I. Adamovich <i>et al.</i>	(CERN WA89 Collab.)	REFID=47312
BIAGI	87	ZPHY C34 15	S.F. Biagi <i>et al.</i>	(BRIS, CERN, GEVA+)	REFID=40132
BIAGI	87C	ZPHY C34 175	S.F. Biagi <i>et al.</i>	(BRIS, CERN, GEVA+)	REFID=40349
BIAGI	81	ZPHY C9 305	S.F. Biagi <i>et al.</i>	(BRIS, CAVE, GEVA+)	REFID=32065
HASSALL	81	NP B189 397	J.K. Hassall <i>et al.</i>	(CAVE, MSU)	REFID=32505
BRIEFEL	77	PR D16 2706	E. Briefel <i>et al.</i>	(BRAN, UMD, SYRA+)	REFID=32345
Also		Duke Conf. 317	E. Briefel <i>et al.</i>	(BRAN, UMD, SYRA+)	REFID=32497
Hyperon Resonances, 1970					
DIBIANCA	75	NP B98 137	F.A. Dibianca, R.J. Endorf	(CMU)	REFID=12062
ROSS	73C	Purdue Conf. 345	R.T. Ross, J.L. Lloyd, D. Radojicic	(OXF)	REFID=32518
BADIER	72	NP B37 429	J. Badier <i>et al.</i>	(EPOL)	REFID=32474
APSELL	70	PRL 24 777	S.P. Apsell <i>et al.</i>	(BRAN, UMD, SYRA+) I	REFID=32515
GOLDWASSER	70	PR D1 1960	E.L. Goldwasser, P.F. Schultz	(ILL)	REFID=12052
DAUBER	69	PR 179 1262	P.M. Dauber <i>et al.</i>	(LRL) I	REFID=11783
ALITTI	68	PRL 21 1119	J. Alitti <i>et al.</i>	(BNL, SYRA) I	REFID=32534
BADIER	65	PL 16 171	J. Badier <i>et al.</i>	(EPOL, SACL, AMST) I	REFID=32509